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In re application of P. MAAS	)	Examiner: G. DISTEFANO
	)	Art Unit: 2175
Serial No.: 10/580,501	)	
	)	Confirmation: 2333
Filed: May 23, 2006	)	
For: **SYSTEM FOR DISPLAYING IMAGES WITH MULTIPLE ATTRIBUTES**	)	
Date of Last Office Action: March 30, 2010	)	
Attorney Docket No.: NL 031427 / PKRX 200125US01	)	Cleveland, OH 44114 August 25, 2010

APPEAL BRIEF

Commissioner For Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

This is an Appeal from the Final Rejection of March 30, 2010.

The Notice of Appeal with the requisite fee was filed June 30, 2010.

Authorization to charge the applicant's Deposit Account with the 37 CFR 41.20(b)(2) fee accompanies this Brief.

CERTIFICATE OF ELECTRONIC TRANSMISSION

I certify that this **APPEAL BRIEF** and accompanying documents in connection with U.S. Serial No. 10/580,501 are being filed on the date indicated below by electronic transmission with the United States Patent and Trademark Office via the electronic filing system (EFS-Web).

August 25 2010
Date

Patricia A Heim
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(i) REAL PARTY IN INTEREST

The Real Party in Interest is the Assignee, KONINKLIJKE PHILIPS ELECTRONICS, N.V.

(ii) RELATED APPEALS AND INTERFERENCES

None.

(iii) STATUS OF CLAIMS

Claims 1-15 and 17-21 are pending

Claim 16 has been cancelled.

Claims 1-15 and 17-21 stand rejected.

No claims stand allowed, confirmed, withdrawn, or objected to.

The rejection of claims 1-15 and 17-21 (all pending claims) is being appealed.

(iv) STATUS OF AMENDMENTS

The Amendment After Final of June 1, 2010 has been entered.

(v) SUMMARY OF CLAIMED SUBJECT MATTER

1. A system **{30}** for displaying a user selectable subset of images from an image data set, the images being at least two-dimensional and being associated with a set of at least one attribute with a respective range of values and an additional attribute with a range of values, the system comprising:

an input **{35}** for receiving the image data set; **{p. 4, l. 14-22; Fig. 3}**

a memory **{32. 39}** for storing the image data set; **{p. 4, l. 22-24; p. 4, l. 34 – p. 5, l. 2}**

an interface for receiving instructions from a user, the interface comprising a manipulation unit **{37, 38}**; **{p. 4, l. 28-30}**

a processor **{36}** for, under control of a computer program:

enabling a user to select a respective subrange of the range of values for at least one of the at least one attribute defined relative to an x- or y-axis and the additional attribute defined relative to a z-axis by scrolling through an image data set substantially parallel to a horizontal x-axis of a display by moving the manipulation unit along an x- direction without use of a slidebar or moving substantially parallel to a vertical y-axis of a display by moving the manipulation unit along a y-direction without use of a slidebar; **{ Fig. 6; p. 7, l. 3-21; p. 9, l. 20 – p. 11, l. 14}**

enabling a user to select a value for the additional attribute by scrolling through the image data set substantially parallel to a z-axis by moving the manipulation unit along a diagonal imaginary z-axis positioned diagonally between and in a common plane with the x-direction and the y-direction without use of a slidebar; **{Fig. 6; p. 7, l. 21-25; Fig. 7; p. 8, l. 19 – p. 9, l. 7; p. 9, l. 20 – p. 11, l. 14}**

determining the subset of images, by selecting images which for the at least one attribute of the set have values in the respective subrange and which also have the value for the additional attribute; **{p. 9, l. 20 – p. 11, l. 4; Figs. 10, 11}**

generating a view of the subset of images **{Figs. 4,5; p. 5, l. 12 – p. 7, l. 2}**; and

an output {32} for providing pixel values of the view for rendering on a display {34}. **{p. 4, l. 24-28}**

2. The system as claimed in claim 1, wherein the manipulation unit comprises a pointer device and the imaginary z-axis is realized in a line extending between the x-axis and the y-axis. **{Fig. 6; p. 7, l. 26 – p. 8, l. 4}**

3. The system as claimed in claim 1, wherein a mouse pointer is provided for providing visual feedback during selection of the subranges or the value of the additional attribute. **{p. 6, l. 10 – p. 7, l. 2; Fig. 5}**

4. The system as claimed in claim 1, wherein an indicator is provided for indicating on the display along which of the x-, y-, and z- axes scrolling is possible. **{p. 9, l. 8 – p. 10, l. 20; Figs. 9A-9F, 10}**

5. The system as claimed in claim 1, wherein a configuration dialog is provided for configuring which attributes are represented by each of the x, y, and z-axes. **{p. 9, l. 20 – p. 10, l. 20; Figs 10, 11}**

6. The system as claimed in claim 1, wherein the processor is arranged for, under control of the computer program,

changing the subset by periodically increasing or decreasing the value of an attribute of the set or the value of the additional attribute; and **{p. 10, l. 5-20; Fig. 10}**

changing the view according to the changed subset. **{p. 10, l. 31 – p. 11, l. 4}**

7. The system as claimed in claim 1, wherein the processor is arranged for, under control of the computer program,

periodically increasing or decreasing a value of a further attribute of each image, said value not being selectable by scrolling substantially parallel to one of the x- and y- axes; and **{p. 10, l. 5 – p. 11, l. 4}**

changing the view according to the changed value. **{p. 10, l. 31 – p. 11, l. 4}**

8. A method for displaying a user selectable subset of images from an image data set, the images being at least two-dimensional and being associated with a set of at least one attribute with a respective range of values and an additional attribute with a range of values, the method comprising acts of:

receiving and storing the image data set; **{p. 4, l. 14-22; Fig. 3}**

enabling a user to select a subrange of the respective range of values of at least one of the attributes by scrolling along a horizontal x-axis of a display without use of a slidebar by moving a manipulation unit substantially in an x- direction and scrolling along a vertical y-axis of the display by moving the manipulation unit substantially in a y- direction without use of a slidebar; **{ Fig. 6; p. 7, l. 3-21; p. 9, l. 20 – p. 11, l. 14}**

enabling a user to select a value for the additional attribute by scrolling along a z-axis by moving the manipulation unit substantially parallel to an imaginary z-axis , the x- direction, the y- direction, and the imaginary z-axis being in a common plane with the imaginary z-axis disposed between the x-direction and the y-direction; **{Fig. 6; p. 7, l. 21-25; Fig. 7; p. 8, l. 19 – p. 9, l. 7; p. 9, l. 20 – p. 11, l. 14}**

determining the subset of images, by selecting images which for the at least one attribute of the set have values in the respective subrange and which also have the value for the additional attribute; **{p. 9, l. 20 – p. 11, l. 4; Figs. 10, 11}**

generating a view of the subset of images **{Figs. 4,5; p. 5, l. 12 – p. 7, l. 2}**; and

providing pixel values of the view for rendering on a display. **{p. 4, l. 24-28}**

9. A tangible computer readable medium **{32}** carrying a computer program operative to cause a processor to perform the method of claim 8. **{p. 4, l. 15-19; Fig. 3}**

10. The system as claimed in claim 1, wherein the image data set is related to medical applications. **{p. 4, l. 6-7}**

11. The system as claimed in claim 1, wherein the processor **{36}** is arranged for, under control of the computer program, increasing the selected subrange at a faster rate than initially in response to the scrolling being maintained. **{p. 6, l. 33 – p. 7, l. 2}**

12. The system as claimed in claim 1, wherein the processor **{36}** is arranged for, under control of the computer program, generating a view of an indication indicating potential directions for the scrolling. **{Fig. 9A-9F; 10; p. 9, l. 8 – p. 10, l. 20}**

13. The method as claimed in claim 8, wherein the image data set is related to medical applications. **{p. 4, l. 6-7}**

14. The method as claimed in claim 8, comprising:

increasing the selected subrange at a faster rate than initially if the scrolling is maintained. **{p. 6, l. 32 – p. 7, l. 2}**

15. The method as claimed in claim 8, comprising:

generating a view of an indication indicating potential directions for scrolling. **{p. 9, l. 8 – p. 10, l. 20}**

17. The method as claimed in claim 8, wherein scrolling along the x-axis includes moving a mouse left-right along an x-direction, scrolling along the y-axis includes moving the mouse away-closer along a y-direction, and scrolling along the z-axis includes moving the mouse diagonally relative to the x- and y-directions. **{Fig. 6; p. 7, l. 3 – p. 8, l. 26}**

18. A method for displaying a user selectable subset of images from an image data set having at least three dimensions, the method comprising:

displaying a selected subset of images in a display plane **{34}**; **{Figs. 4,5; p. 5, l. 12 – p. 7, l. 2}**

moving an input device **{38}** along a first direction **{x}** in a first range of directions to scroll the displayed subset of the images along a first dimension of the at least three dimensions; **{Fig. 5,6; p. 6, l. 10 – p. 8, l. 26}**

moving the input device **{38}** along a second direction **{y}** in a second range of directions to scroll the displayed subset of the images along a second dimension of the at least three dimensions, the second range of directions being orthogonal to the first range of directions; **{Fig. 5,6; p. 6, l. 10 – p. 8, l. 26}**

moving the input device **{38}** along a third direction in a third range of directions to scroll the displayed subset of the images along a third dimension of the at least three dimensions, the third range of directions being disposed diagonally relative to the first and second ranges of directions. **{Fig. 5,6; p. 6, l. 10 – p. 8, l. 26}**

19. The method as claimed in claim 18, wherein the first, second, and third ranges of directions are coplanar and non-overlapping and the first, second, and third dimensions are orthogonal to each other. **{Fig. 5,6; p. 6, l. 10 – p. 8, l. 26}**

20. The method as claimed in claim 18, wherein the first, second, and third directions are coplanar. **{Fig. 5,6; p. 6, l. 10 – p. 8, l. 26}**

21. The system as claimed in claim 1, wherein the set of attributes includes a first attribute, a second attribute, and a third attribute and wherein the processor:

selects and changes the range of values for the first attribute in response to movement of the manipulation unit along the x-direction; **{p. 1, l. 9 – p. 2, l. 19; Fig. 4}**

selects and changes the range of values for the second attribute in response to movement of the manipulation unit along the y-direction, the y-direction being orthogonal to the x-direction **{p. 1, l. 9 – p. 2, l. 19; Fig. 1}**; and

selects and changes the range of values for the third attribute in response to movement of the manipulation unit along the z-direction, the z-direction being at 45 degrees relative to the x-direction and the y-direction, the x-direction, the y-direction, and the z-direction being linear and coplanar. **{Fig. 5,6; p. 6, l. 10 – p. 8, l. 26}**

(vi) GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Whether claims 1-4, 8-10, 12, 13, 15, and 17-21 distinguish patentably in the sense of 35 U.S.C. § 103 over Allen (US 2002/0092239) as modified by Gilligan (US 5,374,942).

Whether claim 5 distinguishes patentably in the sense of 35 U.S.C. § 103 over Allen as modified by Dobbelaar (US 6,538,674).

Whether claim 6 distinguishes patentably in the sense of 35 U.S.C. § 103 over Allen as modified by Gargi (US 6,915,489.

Whether claim 7 distinguishes patentably in the sense of 35 U.S.C. § 103 over Allen as modified by Takabayashi (US 2003/0158476.

Whether claims 11 and 14 distinguish patentably in the sense of 35 U.S.C. § 103 over Allen as modified by Sezaki (US 6,078,313).

(vii) ARGUMENT

A. Claims 1-7, 10-12 & 21 Distinguish Patentably Over the References of Record

Claim 1 calls for a processor which enables a user to select a respective subrange of values for at least one attribute defined relative to x- or y-axes and for an additional attribute defined relative to a z-axis by scrolling through an image data set substantially parallel to a horizontal x-axis of a display by moving the manipulation unit along the x-direction or moving parallel to a vertical y-axis of the display by moving the manipulation unit in a y-direction. Further, claim1 calls for the user to scroll through the image data substantially parallel to a z-axis by moving the manipulation unit along a diagonal imaginary axis positioned diagonally between and in a common plane with the x- and y-directions.

Allen, in Figure 4A, shows a three-dimensional array of object elements OBJ ELM (i, j, k). Allen displays, for example, a two-dimensional array of objects such as the (i, j) plane illustrated in the front of Figure 4A. As shown in Figure 3A, Allen moves the square slider **32** vertically to move, for example, through OBJ ELM (1, 1, 1), (2, 1, 1), ... (5, 1, 1). Similarly, Allen moves the square slider horizontally to move, for example, through OBJ ELM (1, 1, 1), (1, 2, 1), ... (1, 6, 1). Allen could also move the square slider diagonally to move, for example, through OJB ELM (1, 1, 1), (2, 2, 1), (3, 3, 1), ... (5, 5, 1). However, if Allen wants to move into the planes disposed behind the displayed plane, then Allen moves the other slider **33** left or right to move to deeper or further forward planes. Thus, when Allen moves diagonally, Allen stays in the displayed planes and must use the separate slide bar **33** to move to deeper or further forward planes. Moving along a diagonal z-axis does not move into a deeper or further forward plane. The Examiner concedes that Allen does not disclose scrolling in three-dimensions without the use of a slide bar.

The Examiner cites **Gilligan** which he alleges cures this shortcoming. However, rather than teaching that one should move a pointer diagonally to scroll in the z-axis, Gilligan teaches that one should move in a circle to scroll along the z-axis (column 8, lines 1-6).

Gilligan can move the cursor horizontally to scroll in the x-axis (Figure 6a, 6d) and vertically to scroll along the y-axis (Figure 6b, 6e). Presumably,

if Gilligan moves the cursor diagonally across the (x,y) plane, then Gilligan will scroll concurrently along the x- and y-axes on a diagonal path. Diagonal movement of the cursor of Gilligan, like Allen, will not scroll along the z-axis. Thus, Gilligan does not cure the shortcomings of Allen and, indeed, has the same or analogous shortcomings.

Thus, Allen and Gilligan both move in a horizontal direction to scroll along an x-axis and both move in a vertical or y-direction to scroll along a y-axis. To scroll along a z-axis, Allen moves a different slide bar left and right, and Gilligan moves the pointer in circles. Neither Allen nor Gilligan, nor the combination thereof, disclose, teach, or fairly suggest that one could or should scroll along the z-axis by moving along a diagonal direction diagonally between and in a common plane with the x- and y-directions without the use of a slide bar.

As set forth in the January 2010 37 CFR 1.132 Declaration of Petrus Maas, moving the cursor diagonally to scroll along the z-axis is advantageous relative to the second slide bar of Allen and the circular motion of Gilligan. For example, diagonal motion is quickly recognized and provides a faster response time than the Gilligan prescribed circles, it is intuitive to the user, and the like.

Accordingly, it is submitted that **claim 1** and **claims 2-7, 10-12, and 21 dependent therefrom** distinguish patentably and unobviously over Allen as modified by Gilligan.

B. <u>Stewart Does Not Cure the Shortcomings of Allen and Gilligan</u>

It is unclear whether the Examiner has made a new ground of rejection in the Advisory Action, particularly whether the Examiner is further proposing to modify the combination of Allen and Gilligan in light of Stewart ("Calculus, pp. 684-687). **Stewart** does not cure the shortcomings of Allen and Gilligan. Stewart shows that when representing a three-dimensional coordinate system on a plane, one of the axes (the x-axis to be specific), might be shown as a diagonal line. Stewart supports the assertion of the Maas Declaration that moving the manipulation unit diagonally to scroll along the z-axis is more intuitive than moving in circles. However, Stewart does not teach that one should remove the ability to scroll diagonally across an (x, y) plane and cause the diagonal movement which both Allen and Gilligan agree should cause diagonal scrolling to instead cause scrolling along a z-axis.

Accordingly, it is submitted that **claim 1** and **claims 2-7, 10-12, and 21 dependent therefrom** distinguish patentably and unobviously over Allen as modified by Gilligan, as further modified by Stewart.

C. Claim 2 Distinguishes Patentably Over the References of Record

Claim 2 calls for the manipulation unit to include a pointer device and the imaginary z-axis to be realized in a line extending between the x- and y-axes. Again, Allen slides a slide bar **33** left and right to scroll along the z-axis and Gilligan moves the cursor in circles as shown in Figure 7. As seen in Gilligan, two concentric circles are used to scroll in or out of the screen plane (column 9, lines 7-12). Rotating in one direction scrolls to deeper planes and rotating in the opposite direction scrolls to shallower planes. It is submitted that which rotation direction corresponds to deeper and which direction corresponds to shallower is not intuitive, or at least not as intuitive as with diagonal movement.

Because neither Allen nor Gilligan, nor the combination thereof disclose or teach an imaginary z-axis realized by a line extending between the x- and y-axes, it is submitted that **claim 2** distinguishes patentably and unobviously over the references of record.

D. Claims 8, 9, and 13-17 Distinguish Patentably Over the References of Record

Claim 8 calls for scrolling along a z-axis by moving a manipulation unit substantially parallel to an imaginary z-axis, the x-direction, y-direction, and calls for the imaginary z-axis to be in a common plane with and disposed between the x-direction and the y-direction.

By contrast, Allen scrolls along the z-axis by moving the slide bar **33** left and right. Moving in the displayed plane of Allen in a direction between the x- and y-directions will cause scrolling concurrently along the x- and y-directions and will not cause scrolling along a z-axis.

Rather than curing the shortcomings of Allen, Gilligan has analogous shortcomings. Gilligan teaches that to scroll along the z-axis, one should move the cursor in concentric circles. In Gilligan, like in Allen, moving a cursor in the display

plane along an axis between the x- and y-directions will cause concurrent scrolling in the x- and y-directions.

Thus, neither Allen nor Gilligan disclose or teach scrolling along a z-axis by moving a manipulation unit parallel to an imaginary z-axis which is disposed between the x- and y-directions. In both Allen and Gilligan, such motion of a manipulation unit would cause concurrent scrolling along the x- and y-axis, not scrolling along the z-axis. Stewart does not address how a manipulation should be moved in order to scroll along a selected axis.

Accordingly, it is submitted that **claim 8** and **claims 9, 13-15, and 17 dependent therefrom** distinguish patentably and unobviously over the references of record.

E. Claim 17 Distinguishes Patentably Over the References of Record

Claim 17 calls for scrolling along the z-axis to include moving the mouse diagonally relative to the x- and y-directions. By contrast, Allen scrolls along the z-axis by moving a slide bar **33** left and right. Gilligan does not cure this shortcoming of Allen. Rather, Gilligan teaches that to scroll in the z-direction, one should move the mouse in concentric circles. Thus, neither Allen, Gilligan, nor the combination thereof teach or fairly suggest that one should scroll along the z-axis by moving a mouse diagonally relative to x- and y-directions.

Accordingly, it is submitted that **claim 17** distinguishes patentably and unobviously over the references of record.

F. Claims 18-20 Distinguish Patentably Over the References of Record

Claim 18 calls for moving an input device along a first direction in a first range of directions to scroll a displayed subset of images along a first dimension and moving the input device along a second direction, orthogonal to the first, in a second range of directions to scroll the displayed subset of images along a second dimension. Moreover, claim 18 calls for moving the input device along a third direction in a third range of directions to scroll the displayed subset of images along a third dimension.

Claim 18 calls for the third range of directions to be disposed diagonally relative to the first and second ranges of directions.

Allen moves a square scroll bar **32** to move along first and second directions, but moves a different scroll bar **33** left and right to scroll along the third dimension. Moving the square slider diagonally would presumably cause concurrent scrolling in the first and second directions, but would not cause scrolling in the third direction.

Gilligan fails to cure this shortcoming. Gilligan, like Allen, moves an input device along first and second directions to scroll along first and second dimensions. However, to scroll along the third dimension, Gilligan moves the input device in circles. Gilligan does not disclose or teach moving the input device in a third direction in a third range of directions which is disposed diagonally relative to first and second ranges of directions. Thus, Gilligan, like Allen, fails to teach that one could or should scroll in a third of three dimensions by moving an input device diagonally relative to first and second ranges of directions.

Accordingly, it is submitted that **claim 18** and **claims 19 and 20 dependent therefrom** distinguish patentably over the references of record.

G. <u>Claim 19 Distinguish Patentably Over the References of Record</u>

Claim 19 calls for the first, second, and third ranges of directions to be coplanar and non-overlapping, and for the first, second, and third dimensions to be orthogonal. In Allen, both the square slider **32** and the elongated slider **33** move horizontally. That is, their directions of motion are the same and overlapping. In Gilligan, the horizontal and vertical movement directions and the circular movement directions are performed in the same region of the display, e.g., in the center. Hence, the circular motion which designates the z-direction overlaps the first and second directions which designate the x- and y-dimensions.

Accordingly, it is submitted that **claim 19** distinguishes patentably and unobviously over the references of record.

H. Claim 21 Distinguishes Patentably Over the References of Record

Claim 21 calls for the processor to select and change the range of values for the third attribute in response to movement of the manipulation unit along the z-direction, the z-direction being at 45° relative to the x-direction and the y-direction, the x-, y-, and the z-direction being linear. In Allen and Gilligan, moving the manipulation unit at 45° relative to the x- and y-direction merely scrolls concurrently in the x- and y-directions within the (x, y) plane. Neither Allen nor Gilligan suggest moving the manipulation unit at 45° relative to the x- and y-directions to move along the z-direction.

Moreover, Gilligan teaches that movement to designate the z-direction should be circular, i.e., not linear as called for in claim 21.

Accordingly, it is submitted that **claim 21** distinguishes patentably and unobviously over the references of record.

I. Conclusion

For the reasons set forth above, it is submitted that claims 1-15 and 17-21 distinguish patentably and unobviously over the references of record. An early reversal of all of the Examiner's rejections is requested.

Respectfully submitted,

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(viii) CLAIMS APPENDIX

1. (Rejected) A system for displaying a user selectable subset of images from an image data set, the images being at least two-dimensional and being associated with a set of at least one attribute with a respective range of values and an additional attribute with a range of values, the system comprising:

an input for receiving the image data set;

a memory for storing the image data set;

an interface for receiving instructions from a user, the interface comprising a manipulation unit;

a processor for, under control of a computer program:

enabling a user to select a respective subrange of the range of values for at least one of the at least one attribute defined relative to an x- or y-axis and the additional attribute defined relative to a z-axis by scrolling through an image data set substantially parallel to a horizontal x-axis of a display by moving the manipulation unit along an x- direction without use of a slidebar or moving substantially parallel to a vertical y-axis of a display by moving the manipulation unit along a y-direction without use of a slidebar;

enabling a user to select a value for the additional attribute by scrolling through the image data set substantially parallel to a z-axis by moving the manipulation unit along a diagonal imaginary z-axis positioned diagonally between and in a common plane with the x-direction and the y-direction without use of a slidebar;

determining the subset of images, by selecting images which for the at least one attribute of the set have values in the respective subrange and which also have the value for the additional attribute;

generating a view of the subset of images; and

an output for providing pixel values of the view for rendering on a display.

2. (Rejected) The system as claimed in claim 1, wherein the manipulation unit comprises a pointer device and the imaginary z-axis is realized in a line extending between the x-axis and the y-axis.

3. (Rejected) The system as claimed in claim 1, wherein a mouse pointer is provided for providing visual feedback during selection of the subranges or the value of the additional attribute.

4. (Rejected) The system as claimed in claim 1, wherein an indicator is provided for indicating on the display along which of the x-, y-, and z- axes scrolling is possible.

5. (Rejected) The system as claimed in claim 1, wherein a configuration dialog is provided for configuring which attributes are represented by each of the x, y, and z-axes.

6. (Rejected) The system as claimed in claim 1, wherein the processor is arranged for, under control of the computer program,

changing the subset by periodically increasing or decreasing the value of an attribute of the set or the value of the additional attribute; and

changing the view according to the changed subset.

7. (Rejected) The system as claimed in claim 1, wherein the processor is arranged for, under control of the computer program,

periodically increasing or decreasing a value of a further attribute of each image, said value not being selectable by scrolling substantially parallel to one of the x- and y- axes; and

changing the view according to the changed value.

8. (Rejected) A method for displaying a user selectable subset of images from an image data set, the images being at least two-dimensional and

being associated with a set of at least one attribute with a respective range of values and an additional attribute with a range of values, the method comprising acts of:

receiving and storing the image data set;

enabling a user to select a subrange of the respective range of values of at least one of the attributes by scrolling along a horizontal x-axis of a display without use of a slidebar by moving a manipulation unit substantially in an x- direction and scrolling along a vertical y-axis of the display by moving the manipulation unit substantially in a y- direction without use of aslidebar;

enabling a user to select a value for the additional attribute by scrolling along a z-axis by moving the manipulation unit substantially parallel to an imaginary z-axis , the x- direction, the y- direction, and the imaginary z-axis being in a common plane with the imaginary z-axis disposed between the x-direction and the y-direction;

determining the subset of images, by selecting images which for the at least one attribute of the set have values in the respective subrange and which also have the value for the additional attribute;

generating a view of the subset of images; and

providing pixel values of the view for rendering on a display.

9. (Rejected) A tangible computer readable medium carrying a computer program operative to cause a processor to perform the method of claim 8.

10. (Rejected) The system as claimed in claim 1, wherein the image data set is related to medical applications.

11. (Rejected) The system as claimed in claim 1, wherein the processor is arranged for, under control of the computer program, increasing the selected subrange at a faster rate than initially in response to the scrolling being maintained.

12. (Rejected) The system as claimed in claim 1, wherein the processor is arranged for, under control of the computer program, generating a view of an indication indicating potential directions for the scrolling.

13. (Rejected) The method as claimed in claim 8, wherein the image data set is related to medical applications.

14. (Rejected) The method as claimed in claim 8, comprising:

increasing the selected subrange at a faster rate than initially if the scrolling is maintained.

15. (Rejected) The method as claimed in claim 8, comprising:

generating a view of an indication indicating potential directions for scrolling.

16, (Cancelled)

17. (Rejected) The method as claimed in claim 8, wherein scrolling along the x-axis includes moving a mouse left-right along an x-direction, scrolling along the y-axis includes moving the mouse away-closer along a y-direction, and scrolling along the z-axis includes moving the mouse diagonally relative to the x- and y-directions.

18. (Rejected) A method for displaying a user selectable subset of images from an image data set having at least three dimensions, the method comprising:

displaying a selected subset of images in a display plane;

moving an input device along a first direction in a first range of directions to scroll the displayed subset of the images along a first dimension of the at least three dimensions;

moving the input device along a second direction in a second range of directions to scroll the displayed subset of the images along a second dimension of the at least three dimensions, the second range of directions being orthogonal to the first range of directions;

moving the input device along a third direction in a third range of directions to scroll the displayed subset of the images along a third dimension of the at least three dimensions, the third range of directions being disposed diagonally relative to the first and second ranges of directions.

19. (Rejected) The method as claimed in claim 18, wherein the first, second, and third ranges of directions are coplanar and non-overlapping and the first, second, and third dimensions are orthogonal to each other.

20. (Rejected) The method as claimed in claim 18, wherein the first, second, and third directions are coplanar.

21. (Rejected) The system as claimed in claim 1, wherein the set of attributes includes a first attribute, a second attribute, and a third attribute and wherein the processor:

selects and changes the range of values for the first attribute in response to movement of the manipulation unit along the x-direction;

selects and changes the range of values for the second attribute in response to movement of the manipulation unit along the y-direction, the y-direction being orthogonal to the x-direction; and

selects and changes the range of values for the third attribute in response to movement of the manipulation unit along the z-direction, the z-direction being at 45 degrees relative to the x-direction and the y-direction, the x-direction, the y-direction, and the z-direction being linear and coplanar.

(ix) EVIDENCE APPENDIX

This appendix contains the 37 CFR 1.132 Declaration of the inventor, Petrus Maas, which shows the advantages and the non-obviousness of the claimed concepts over the prior art in the opinion of an expert in the field.

(x) RELATED PROCEEDINGS APPENDIX

There are no related proceedings.

CUSTOMER NO.: 24737

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of P. MAAS	)	Examiner: G. DISTEFANO
	)	Art Unit: 2175
Serial No.: 10/580,501	)	Confirmation: 2333
Filed: May 23, 2006	)	
For: **SYSTEM FOR DISPLAYING IMAGES WITH MULTIPLE ATTRIBUTES**	)	
Attorney Docket No.: NL 031427 / PKRX 2 00125	)	Cleveland, OH 44114 January 4, 2010

37 CFR 1.132 DECLARATION

Commissioner For Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

I, the undersigned, Petrus C.F. MAAS, of Veenpluis 4-6, Best, THE NETHERLANDS, hereby declare as follows:

I have a Master of Science degree in Applied Physics from the Delft University of Technology. I was an Expert in User Interface Design for Koninklijke Philips Electronics, N.V. from 2000 to 2007.

I am the inventor of US application Serial No. 10/580,501.

When working with diagnostic image data, 3D data sets are commonly encountered, particularly a stack of two-dimensional diagnostic images with each of the diagnostic images in the stack spatially offset from neighboring 2D images by a short distance, e.g., 1 mm – 1 cm. When reviewing the diagnostic images, the radiologist typically reviews a plurality of the two-dimensional images in the stack. Scrolling through a given one of the 2D images is readily done by moving a manipulation unit along a horizontal or x-axis to move the given image from side to

side or along a vertical or y-axis to move the given image upward and downward. However, scrolling or otherwise moving through the stack of 2D images into and out of the plane of the paper along a z-axis has been problematic.

The Examiner cites Gilligan (US 5,374,942) which discloses moving a mouse in a circular direction to designate a third or z-axis (column 7, line 60 – column 8, line 6). However, the circular motion does not provide a satisfactory technique for scrolling along the z-axis.

It is important to scroll precise distances in the z-direction, without jumping in the x or y-directions during z-direction scrolling. When scrolling through a stack of diagnostic images along the z-axis, the radiologist typically expects to see the same structure in the same x,y position in each 2D image. This enables the radiologist to view a structure of interest, such as a tumor, organ, or the like, successively in each of a plurality of closely spaced planes. If the structure of interest were to shift along the x or y-axes as the radiologist stepped to successive images, the radiologist would be misled regarding the 3D shape of the structure.

Scrolling in the z-direction should be independent of scrolling in the x or y-directions. In scrolling through the stack of diagnostic images, it is important to keep the x and y-positions constant. The horizontal or vertical motions of a mouse in the early stages of drawing circle can leave the processor to believe that the user's intent is a small shift in the x or y-direction and providing such scrolling in the x or y-direction rather than holding them constant.

One advantage of moving the manipulation unit diagonally is that the intended movement is recognized by the processor almost immediately with very little motion of the manipulation unit. Complex manipulation unit patterns make it harder to determine the user's intent. When moving a mouse in a circle, the first component of motion is often along the x or y-axis, which could result in the resultant image being shifted in the x or y-direction. Until the user is moved a substantially full circle, the processor may be confused regarding the user's intent. Rapidly recognizing the user's intent provides rapid feedback to the viewer. The user receives substantially instantaneous feedback which facilitates precise, small movement along the z-axis.

When scrolling through a large stack of images, the radiologist wants to have relatively fine resolution to be easily able to move in small increments, such as single slices. Accordingly, it is important that the movement of the manipulation unit be recognized quickly by the processor in response to a small amount of manipulation unit movement. As illustrated in FIGURE 6 of the present application, movement within the region F to scroll in the z-direction can be differentiated almost instantly by the processor from the region U for scrolling in the y-direction, or the region R for scrolling in the x-direction. In this manner, the image viewing application can determine the intended movement of the manipulation movement in a very early stage of user interaction such that the result of the interaction is almost immediately visible feedback to the user providing meaningful user feedback. More complex patterns make it harder to determine the user intent, creating significant time delays before providing user feedback.

Moving on a diagonal is quick to learn. Further, it is intuitive which direction along the diagonal moves into the plane of the display and which direction moves out of the plane. Moving in a circle is not intuitive. The reader is invited to ask themselves whether clockwise or counterclockwise connotes movement into the plane of the display.

Moving on a diagonal is not a mere matter of choice. Rather, it produces superior results. Moving in a diagonal responds more quickly, provides faster user feedback, enables the intent of the user to be determined quickly, is independent of x and y-scrolling, is less apt to result in movement of the image along the x or y-axes before the system recognizes the user's intent, and the like.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Signed at **Best (Netherlands)** on this **Monday** of **January 4, 2009**.

Respectfully submitted,

Petrus C.F. MAAS

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PETER MAAS

PERSONAL DETAILS

Name:	Peter (PCF) Maas
Birth Date:	June 3, 1965
Nationality:	Dutch
Languages:	Dutch, English, German, French
Education:	Master of Science in Applied Physics

EMPLOYMENT

1997 – 2010 Philips Medical Systems Nederland N.V. Eindhoven
PMG Magnetic Resonance

***Senior Software Engineer / Designer** (2007 –)*

- In a software / hardware project responsible for the software design and implementation of a Coil Selection user interface. Responsibilities include software requirements management, software architecture, design, implementation and logistics.

***Domain Expert UI Design & Usability** (2002 – 2007)*

Responsible for:

- UI design
  Create solutions to enhance 'ease of use'. Make proto-types of new solutions in order to communicate with the customer (mostly applications specialists and clinical scientists). Consolidate solutions and *patent* them when possible.
- UI vision and predevelopment
  Pre-develop (and proto type) new concepts and ideas. Contribute to the UI roadmap for MR.
- Knowledge management
  Follow technological developments through literature, seminars, conferences and the Internet. Set and maintain up a knowledge network within PMS (Best, Cleveland and Haifa).
- UI consistency
  Define and maintain UI consistency guidelines in accordance with current PMS UI harmonization standards.

***Software usability engineer** (2000 – 2002)*

Working for the Clinical Post-processing and User Interface (CPUI) group as a usability engineer on the following subjects:

- Introduction of several usability aspects in post-processing software.
- UI Design and architecture of a new user interface (platform) for MR on a C# Winforms .Net platform.
- User Interface design for clinical post-processing of images.

***Software engineer** (1997 – 2000)*

Working for the Clinical Viewing Platform group as a software engineer. Projects were mainly User Interface related on a DEC VMS / X Windows

/ MOTIF platform.

1995 - 1997 ICT Automatisering B.V. Eindhoven

Software engineer

Placed by ICT at PMS-MR, as a member of the External Interfaces group.

1994 Random Computer Services Tilburg

Software programmer

Design, implementation, installation and maintenance of small (mostly administrative) software packages on demand.

EDUCATION

1985 - 1993 Delft University of Technology Delft
Faculty of Applied Physics

Master of Science in Applied Physics

As member of the Computational Physics group, I worked on a thesis titled: *"Design and Implementation of Visualization Methods for Traffic Assignment Models".*

The Computational Physics group aims to develop and implement models for the simulation of physical phenomena. As a spin-off, my research subject was to design and implement visualization methods and techniques applied to traffic assignment models. This resulted in a software package called X Traffic Simulator & Visualizer, which was utilized during further research by the Faculty of Civil Engineering, later published in "Delft Integral".

1977 – 1985 MAVO-4, HAVO-5, Atheneum Raamsdonksveer

SOFTWARE COMPETENCIES

Platforms:

MFC, Win32, WinForms, .NET, WPF, OpenGL, DirectX/Direct3D, DEC Windows, X11, MOTIF

Software engineering:

Software design (OOAD), User interface design & Usability engineering
Object oriented modeling and design, design patterns and anti patterns
Requirements management
Microsoft Certified Solution Developer / Microsoft Certified Professional
C#, Java, (un)managed C++, C, Basic, UIL, Pascal and ASM

Process:

Familiar with project management.
Team leadership.
Certified in the Personal Software Process (learn from experience).